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EXAMINER	
CHOJNACKI, MELLISSA M	
ART UNIT	**PAPER NUMBER**
2164	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/073,453	PHOHA ET AL.	
	Examiner	Art Unit	
	Mellissa M Chojnacki	2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 01-October-2004.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-15 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. In response to communications filed on October 1, 2004, claims 1-15 are presently pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lakshmi et al. (U.S. Patent No. 6,108,648) in view of Kakazu et al. (U.S. Patent No. 5,333,238).

As to claim 1, Lakshmi et al. teaches a system having a plurality of computers each having data sets stored thereon, a method of assigning a computer to service a request for a data set (See abstract; column 3, lines 66-67; column 12, lines 53-63), the method comprising the steps of:

(b) receiving a request for particular data set I (See column 5, lines 1-6, where "receiving a request" is read on "generated queries");

(d) selecting a computer assignment associated with a selected one of the output nodes to service the data request, where the selected output node is associated with a specific weight (See column 3, lines 6-15, lines 40-44), the specific weight selected to

minimize a predetermined metric measuring the distance between the vector entry R(I) and the weights(I,k) associated with the input node I and the output nodes (See column 3, lines 6-17, lines 40-44; column 5, lines 65-67; column 6, lines 1-4).

Lakshmi et al. does not teach providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes, each of the output nodes associated with one of the computers, and associated weights w(j,k) between each the input node and each the output node; and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time.

Kakazu et al. teaches a method and apparatus for checking input-output characteristic of neural network (See abstract), in which he teaches providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes (See column 1, lines 13-22; column 2, lines 18-26; column 3, lines 50-55), each of the output nodes associated with one of the computers (See abstract), and associated weights w (j,k) between each the input node and each the output node (See abstract; column 1, lines 13-22, lines 32-36); and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time (See column 2, lines 27-30; column 4, lines 62-67).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have modified Lakshmi et al., to include providing a neural network having at least an input layer having J input nodes and an

output layer having K output nodes, each of the output nodes associated with one of the computers, and associated weights w (j,k) between each the input node and each the output node; and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lakshmi et al., by the teachings of Kakazu et al. because providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes, each of the output nodes associated with one of the computers, and associated weights w (j,k) between each the input node and each the output node; and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time would improve the method and apparatus for easily checking or inspecting the input-output characteristic of a neural network (See Kakazu et al., column 2, lines 9-12).

As to claim 2, Lakshmi et al. as modified, teaches where the method further includes the step of updating the specific weight (See Lakshmi et al., column 3, lines 6-17, lines 40-44; column 5, lines 65-67; column 6, lines 1-4; column 6, lines 65-67; also see Kakazu et al., abstract; column 1, lines 28-31).

As to claim 3, Lakshmi et al. as modified, teaches where the step of updating the specific weight includes modifying the specific weight with a factor dependent the metric distance between the vector entry R(I) and the specific weight (See Lakshmi et al., column 5, lines 2-6, lines 65-67; column 6, lines 1-4; column 6, lines 65-67).

As to claim 4, Lakshmi et al. as modified, teaches where the step of updating the specific weight further includes modifying the specific weight with a means to balance the load across a subset of the output nodes (See Lakshmi et al., column 5, lines 2-6, lines 65-67; column 6, lines 1-4; column 6, lines 65-67).

As to claim 5, Lakshmi et al. as modified, teaches where the means to balance the load across a subset of the output nodes is dependent upon the number of data requests serviced by the subset of the output nodes over the predetermined period of time divided by the number of output nodes in the subset of the output nodes (See Lakshmi et al., column 5, lines 63-67; column 6, lines 1-4, lines 54-59).

As to claim 6, Lakshmi et al. as modified, teaches wherein R(I) is proportional to the ratio of (the number of previous requests for the requested data set) and (the number of previous requests for a subset of all data sets), over the predetermined period of time (See Lakshmi et al., column 1, lines 25-29; column 7, lines 24-27).

As to claim 7, Lakshmi et al. as modified, teaches wherein each output node is associated with a neighborhood of other output nodes, and the step of updating the specific weight includes updating each weight in the neighborhood of the output node associated with the specific weight (See Lakshmi et al., column 3, lines 6-17, lines 40-44; column 5, lines 65-67; column 6, lines 1-4; column 6, lines 65-67; also see Kakazu et al., abstract; column 1, lines 28-31).

As to claim 8, Lakshmi et al. as modified, teaches where the update is according to the formula W(I,j)=W(I,j) +alpha((R(I)-w(I,j)) + beta(Y-W(i,k) -gama*W(I,j)) , where alpha, beta and gama are predetermined constants (See Kakazu et al.,, column 6, lines 39-41).

As to claim 9, Lakshmi et al. as modified, teaches where the input vector's components, other than the component R(I) associated with the input node I, are of value zero (See Lakshmi et al., abstract; column 2, lines 47-58).

As to claim 10, Lakshmi et al., teaches in a web farm of servers, a method of selecting a server to service a user request for a data set (See abstract; column 3, lines 66-67; column 12, lines 53-63) comprising the steps of:

(b) receiving a request for particular data set I (See column 5, lines 1-6, where "receiving a request" is read on "generated queries");

(d) selecting a server assignment associated with of one of the output nodes to service the data request, where the output node is associated with a specific weight, the specific weight selected to minimize a predetermined metric measuring the distance between the vector entry R(I) and the weights(I,k) associated with the input node I and the output nodes (See column 3, lines 6-17, lines 40-44; column 5, lines 65-67; column 6, lines 1-4).

Lakshmi et al. does not teach providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes, each of the output nodes associated with one of the servers, and associated weights w(j,k) between each the input node and each the output node; and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time.

Kakazu et al. teaches a method and apparatus for checking input-output characteristic of neural network (See abstract), in which he teaches providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes, each of the output nodes associated with one of the servers, and associated weights w(j,k) between each the input node and each the output node (See column 1, lines 13-22; column 2, lines 18-26; column 3, lines 50-55), each of the output nodes associated with one of the computers (See abstract), and associated weights w(j,k) between each the input node and each the output node (See abstract; column 1, lines 13-22, lines 32-36); and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the

requested data over a predetermined period of time (See column 2, lines 27-30; column 4, lines 62-67).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have modified Lakshmi et al., to include providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes, each of the output nodes associated with one of the servers, and associated weights w (j,k) between each the input node and each the output node; and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lakshmi et al., by the teachings of Kakazu et al. because providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes, each of the output nodes associated with one of the servers, and associated weights w (j,k) between each the input node and each the output node; and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time would improve the method and apparatus for easily checking or inspecting the input-output characteristic of a neural network (See Kakazu et al., column 2, lines 9-12).

As to claim 11, Lakshmi et al. as modified, teaches where the method is implemented on at least one server in the web farm (See Lakshmi et al., column 3, lines 20-27).

As to claim 12, Lakshmi et al. as modified, teaches where the method is implemented on at least one router in the web farm (See Lakshmi et al., column 12, lines 53-63, where “router” is read on “device”).

As to claim 13, Lakshmi et al. as modified, teaches comprising the step of transmitting the request to the server associated with the server assignment (See Lakshmi et al., column 3, lines 20-27; column 10, lines 12-22).

As to claim 14, Lakshmi et al., teaches a computer readable storage medium containing computer executable code for performing a method of assigning a computer from a set of computers to service a request for a data set, the method (See abstract; column 3, lines 66-67; column 12, lines 53-63) comprising the steps of:

(b) receiving a request for particular data set I (See column 5, lines 1-6, where “receiving a request” is read on “generated queries”);

(d) selecting a computer assignment associated with a specific one of the series of weights w(I,j) to service the data request, where the specific weight is selected to minimize a predetermined metric measuring the distance between the value R(I) and

the weights(I,k) associated with the particular data set 1 (See column 3, lines 6-17, lines 40-44; column 5, lines 65-67; column 6, lines 1-4).

Lakshmi et al. does not teach associating for each data set I a series of weights w(I,j), where j=I, number of computers in the set of computers, associating with each individual weight w(I,j) one of the computers from the set of computers; and associating with the requested data seta value R(I) being dependent upon the number of requests for the requested data set over a predetermined period of time.

Kakazu et al. teaches a method and apparatus for checking input-output characteristic of neural network (See abstract), in which he teaches associating for each data set I a series of weights w(I,j), where j=I, number of computers in the set of computers, associating with each individual weight w(I,j) one of the computers from the set of computers (See abstract; column 1, lines 13-22, lines 32-36; column 2, lines 18-26; column 3, lines 50-55); and associating with the requested data seta value R(I) being dependent upon the number of requests for the requested data set over a predetermined period of time (See column 2, lines 27-30; column 4, lines 62-67).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have modified Lakshmi et al., to include associating for each data set I a series of weights w (I,j), where j=I, number of computers in the set of computers, associating with each individual weight w(I,j) one of the computers from the set of computers; and associating with the requested data seta value R(I) being dependent upon the number of requests for the requested data set over a predetermined period of time.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lakshmi et al., by the teachings of Kakazu et al. because associating for each data set I a series of weights w (I,j), where j=l, number of computers in the set of computers, associating with each individual weight w (I,j) one of the computers from the set of computers; and associating with the requested data seta value R(I) being dependent upon the number of requests for the requested data set over a predetermined period of time would improve the method and apparatus for easily checking or inspecting the input-output characteristic of a neural network (See Kakazu et al., column 2, lines 9-12).

As to claim 15, Lakshmi et al., teaches a computer readable storage medium containing computer executable code for performing a method of assigning a computer for a set of computers to service a request for a data set (See abstract; column 3, lines 66-67; column 12, lines 53-63) comprising the steps of:

(b) receiving a request for particular data set I (See column 5, lines 1-6, where "receiving a request" is read on "generated queries");

(d) selecting a computer assignment associated with of one of the output nodes to revise the data request, where the output node is associated with a specific weight, the 1 specific weight selected to minimize a predetermined metric measuring the distance between the vector entry R(I) and the weights(I,k) associated with the input node I and the output nodes (See column 3, lines 6-17, lines 40-44; column 5, lines 65-67; column 6, lines 1-4).

Lakshmi et al. does not teach providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes, each of the output nodes associated with one of the computers, and associated weights w(j,k) between each the input node and each the output node; and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time,

Kakazu et al. teaches a method and apparatus for checking input-output characteristic of neural network (See abstract), in which he teaches providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes, each of the output nodes associated with one of the computers, and associated weights w(j,k) between each the input node and each the output node (See abstract; column 1, lines 13-22, lines 32-36; column 2, lines 18-26; column 3, lines 50-55); and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time (See column 2, lines 27-30; column 4, lines 62-67).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have modified Lakshmi et al., to include providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes, each of the output nodes associated with one of the computers, and associated weights w(j,k) between each the input node and each the output node; and imputing to the input layer an input vector having an entry R(I) at input

node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time,

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Lakshmi et al., by the teachings of Kakazu et al. because providing a neural network having at least an input layer having J input nodes and an output layer having K output nodes, each of the output nodes associated with one of the computers, and associated weights w(j,k) between each the input node and each the output node; and imputing to the input layer an input vector having an entry R(I) at input node I, the entry R(I) being dependent upon the number of requests for the requested data over a predetermined period of time would improve the method and apparatus for easily checking or inspecting the input-output characteristic of a neural network (See Kakazu et al., column 2, lines 9-12).

Response to Arguments

4. Applicant's arguments filed on 01-October -2004, with respect to the rejected claims 1-15 have been fully considered but they are not found to be persuasive:

In response to applicants' arguments regarding independent claim 1, that "Lakshmi does not teach or suggest any means of choosing a particular computer from a plurality of computers to respond to a data request". Lakshmi et al. teaches selectively choosing "processing units" within the "neural network" (See abstract, lines 8-16; column 5, lines 24-53, where "processing units" is read on "computers").

In response to applicants' arguments regarding Kakazu does not "teach or suggest associating the input vector components with the number of prior requests for a particular data set over a predetermined period of time". "Prior requests" is not mention in claim 1. Dependent claim 6 mentions "previous requests" which Kakazu et al. teaches using an input vector (See abstract; claim 1) and Lakshmi et al. teaches results generated by an executor that is divided into data sets and presented to a feature vector (See column 5, lines 1-23). The results are queries that were previously generated. Therefore, claims 1-15 stand rejected.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mellissa M Chojnacki whose telephone number is (571) 272-4076. The examiner can normally be reached on 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on (571) 272-4083. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mmc
February 4, 2005

SAM RIMELL
PRIMARY EXAMINER